

STRUCTURES SPECIALIST

August 29, 2003

a. Position Description

The Structures Specialist is responsible for performing the various structural assessments for the Task Force during incident operations. The Structures Specialist reports directly to the Planning Team Manager.

The Structures Specialist is responsible for:

- Assessing the structural condition within the area of Task Force operations, which includes identifying structure types and specific damage and structural hazards;
- Recommending the appropriate type and amount of structural hazard mitigation in order to minimize risks to Task Force personnel;
- Adhering to all safety procedures;
- Cooperating with and assisting other search and rescue resources;
- Providing accountability, maintenance, and minor repairs for all issued equipment;
- Performing additional tasks or duties as assigned during a mission;
- Monitoring assigned structure for condition changes while rescue and recovery operations are proceeding;
- Assuming an active role in implementing approved structural hazard mitigation as a designer, inspector, and possibly a supervisor; and
- Coordinating and communicating the structural related hazard mitigation with IST Structural Unit Leader.

b. Position Requirements and Criteria:

Individuals who meet the following requirements and criteria will be eligible to become Structures Specialists in the DHS/FEMA US&R Response System. The intent of these requirements is to select personnel fully capable of providing competent assessments and advice to Task Force personnel in the urban disaster environment. The requirements and criteria for the position are identified in the following categories:

- Knowledge
- Skills
- Abilities.

Knowledge:

The Structures Specialist must have:

- Prerequisite knowledge of NFPA 1670;
- Comprehensive knowledge of building materials, and methods;

- Knowledge of the behavior of structures under adverse loading conditions;
- Knowledge of the appropriate types of structural hazard reduction methods for various types of collapsed structures;
- Knowledge of victim access methods; and
- Completed the DHS/FEMA Structural Specialist Course.

Skills:

The Structures Specialist must:

- Be currently licensed as a professional engineer specialization in structures or equivalent as sanctioned by the DHS/FEMA US&R Advisory Committee; and
- Have a minimum of 5 years experience in structure design and analysis to include evaluation of existing structures, field investigation, or construction observation experience.

Abilities:

The Structures Specialist must be:

- Able to identify features that allow for the determination of the condition of structures subjected to adverse loading;
- Able to identify vertical load and lateral force resisting framing systems and is able to identify the critical elements within those systems;
- Able to identify failure indications of building materials;
- Able to identify building features that could provide entry or access to victims such as ducts, shafts, etc; and
- Able to recommend practical solutions for US&R operations in compromised structures.

c. Operational Checklist

The purpose of this checklist is to define the duties and responsibilities of the Structures Specialist during a mission assignment. The list is intended to be a general summary of actions. It should be understood that:

- Some required actions may not be listed, but must be identified and assumed by this position;
- Some actions may be the primary responsibility of another Task Force position, but may require assistance and coordination from this position; and
- The actions are listed in a general chronological order, but may require deviation.

(1) Upon Activation/At Task Force Assembly Point:

- Gather data on building construction, damage assessments, relevant data in the disaster area for the purposes of formulating action plans; and
- Brief Task Force personnel on building construction and considerations to be anticipated in the affected area.

(2) At Point of Departure:

See general operational checklist.

(3) In Transit:

See general operational checklist.

(4) Arrival at Mobilization Center:

- Brief Rescue Manager, Search Manager, Safety Officer, and Heavy Rigging Specialists on relevant structural concerns; and
- Determine coordination and communication protocol with the IST Structural Unit Leader.

(5) On-Site Operations:

- Perform structural triage and brief reconnaissance team on structural considerations;
- Mark building in accordance with the Structure/Hazards Evaluation and Search Assessment procedures;
- Gather appropriate building plans, etc. as available and coordinate with building representative if available;
- Contact local structural engineers, contractors, and/or building department officials to determine construction data;
- Provide assessment to Task Force team managers, Safety Officer, and Heavy Rigging Specialists, including:
 - ◊ Recommendation for areas requiring hazard mitigation with respect to shoring and bracing (using available materials) and/or the removal of structural components, hazards, and debris; and
 - ◊ Discuss the most productive method of access relative to probable location of victims;
- Work with search and rescue personnel to determine the most appropriate course of action to gain access to victims. This would include:
 - ◊ Most appropriate routes to conduct searches;
 - ◊ Determine what structural materials are likely to be found while gaining access;

- ◇ Effects of rescue operations on other building elements;
 - ◇ Special precautions required during breaching operations;
 - ◇ Special considerations of buildings with basements; and
 - ◇ Advice on the placement of shoring and bracing material.
- Make recommendations for monitoring the assigned structures for changing conditions; and
 - Keep the Planning Team Manager apprised of any tactical accomplishments or conflicts, supplies deficiencies, or equipment malfunctions.

(6) Reassignment/Demobilization:

- Notify the assigned supervisor of the loss or potential maintenance requirements of any assigned tools and equipment.